



## **ZONING INTERPRETATION RECORD**

### **City of Flagstaff**

#### **Community Investments Division**

#### **Subject of Interpretation:**

The determination of forest resources on a site subject to new development.

#### **Land Development Code Section Number:**

10-04-003-0006A and B

#### **Title of Section:**

10-04-003-0006. FORESTS:

#### **Cause for Interpretation:**

To provide clarification and direction on the determination of forest resources as defined in the Land Development Code for all new development, except as provided in Section 10-01-004-0001C.

#### **Background:**

It is worthwhile restating and summarizing some of the pertinent sections of the Land Development Code as they apply in this matter.

Chapter 10-14 Definitions defines a “forest” as *“the square footage of the drip line area of one or more tree(s), which trees have a diameter at breast height (DBH) of six (6) inches or more per Chapter 10-04, Section 10-04-003-0006 and Table 10-04-003-0006”*.

Section 10-04-003-0006 FORESTS establishes two sections, one of which applies to how the forest area is determined, (Paragraph A DETERMINATION), while the other (Paragraph B METHODOLOGY) provides a methodology for calculating forest resource protection areas. A summary follows:

#### **Paragraph A:**

1. Forest boundaries shall be based on a field survey by one of a number of specifically listed professionals. (Emphasis added)
2. As an alternative for single-family residential subdivisions or five acres or more, a sampling methodology option is established, provided that the sampling is *“representative of the entire site”* and is approved by the Planning Director. The Planning Director also has the ability to accept, modify, or reject the submitted sampling methodology.

Paragraph B establishes a detailed method for calculating forest resource protection areas based on the field survey (which identified the DBH of trees on the subject property) and the application of a table to establish tree drip line area.

#### **Current Practice:**

It is my understanding that the current practice for determining the extent of forest areas and calculating forest resource protection areas is different to that provided in the Land Development Code and described above, in as much that aerial photographs are used rather than field survey to determine forest areas. Using an aerial photograph of the site, individual

trees or tree groups are traced, and the area within the drip line is determined and used as the forest resource area. While this method certainly is simple, and it saves the developer money because no field survey work is required, it fails to provide a detailed inventory of trees on the site, is inherently inaccurate, ignores the size and health of the tree, and does not in a meaningful way provide for the adequate preservation of tree resources on a site. Section 10-01-003-0001B-2 establishes as one of the purposes of the Land Development Code to “*preserve and protect the City’s natural resources, including floodplains, steep slopes, and forests*” (Emphasis added). As a result, there is no mapping or determination of the value or quality of the trees (for example, based on its size it is reasonable to propose that a large and mature pine tree is more valuable and of a higher quality than a smaller tree), and the intent of preserving and protecting trees within the City is compromised.

### **Interpretation:**

It is therefore determined, that the current practice of determining forest areas by using aerial photographs conflicts with the purpose of the Natural Resource Protection Standard division of the Land Development Code.

As required in Section 10-04-003-0006, forest boundaries shall be based on a field survey compiled by an Arizona Registered Land Surveyor, architect, engineer, landscape architect, or forester. However, the Code also provides an alternative for single-family residential subdivisions or five acres or more, through the inclusion of the word “or” to permit the Planning Director to allow application of a sampling methodology rather than map the entire site.

A “sample” is typically defined as being a representative subset of a larger population. The American Heritage Dictionary defines a sample as “*a set of elements drawn from and analyzed to estimate the characteristics of a population. Also called sampling.*”

By applying a sampling methodology to a site larger than five acres, a developer or his consultant would sample trees for various locations within the site based on established statistical procedures to ensure a representative sample based on such factors as for example, tree size (DBH), canopy diameter or area, and density. It is therefore concluded that the practice of tracing the outline of the tree canopy or drip line from an aerial photograph to determine forest resource protection area does not meet the conventional understanding of a “sample” or “sampling methodology” as provided in the Land Development Code.

It is further determined that this practice should stop as soon as possible for applications for approval of all new development projects submitted to the Community Development Department. However, if staff has already provided guidance and comment on a project now being planned and designed under the current practice of tree resource mapping, and it will constitute a hardship to the developer to resubmit his forest resource protection area calculations, then he/she should be allowed to continue through the approval process without making amendments to his application. All new projects must be required to follow the process established in the Land Development Code for forest resource preservation.

**Recommendations:**

The emphasis of this section of the Land Development Code is strongly biased toward preserving the “quantity” of native trees, rather than studying the “quality” of those trees. As a result, on a recently approved project that is now under construction, little or no consideration appears to have been given to preserving the large and healthy ponderosa pine trees that were on the site, and only smaller trees on the site’s periphery have been retained.

The following recommendations are therefore proposed:

**Long Term:**

1. A comprehensive review of Section 10-04-003-0006 is needed and amendments proposed to shift the emphasis of the Code to identify and preserve the large and healthy trees on a development site (obviously criteria would be established to determine this) and to provide incentives for the preservation and protection of these trees.
2. Require review of the trees by a certified tree professional (includes an arborist, forester, etc.) to determine the health of a tree as there is no need to save a dead or dying tree even if it has a larger canopy!!
3. The Code should be written to provide a stronger emphasis on the determination of DBH for a tree during field survey and mapping, rather than its canopy area.
4. The tree protection section should be revised based on some of the ideas from the draft Tree Preservation Ordinance written for the City of Sedona, as well as other similar ordinances.

**Short term:**

1. A process should be implemented as soon as possible to require field review/inspection by Code Enforcement staff prior to building or grading permit issuance. Note that this is already enabled by Section 10-06-005-0002F. Coordination between appropriate Community Investment and Development Services staff is required to implement these inspections.
2. Throughout construction, random site inspections by Code Enforcement staff must also be made, and the condition of approved tree protection measures documented.
3. The current provisions of the Land Development Code as they pertain to the preservation of forest resources must be applied as written in accordance with the interpretation provided on Page 2.

**Interpretation by:** \_\_\_\_\_ **Date:** \_\_\_\_\_  
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